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Information technology — Media context and control —

Part 4: Virtual world object characteristics

Technologies de l'information — Contrôle et contexte de supports —
Partie 4: Caractéristiques d'objet du monde virtuel

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

This fourth edition cancels and replaces the third edition (ISO/IEC 23005-4:2016), which has been technically revised.

The main changes compared to the previous edition are the addition of:

— new element “SensoryEffectList” to VWOBaseType.

A list of all parts in the ISO/IEC 23005 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

The ISO/IEC 23005 series provides an architecture and specifies information representation of data flowing in and out of the real world and virtual worlds.

The data for the real world are communicated through sensors and actuators. The data for virtual worlds consist of properties of virtual objects and multi-sensorial data embedded in audio-visual content. MPEG-V specifies data formats for sensors, actuators, virtual objects, and audio-visual content.

Data captured from the real world may need to be adapted for use in a virtual world and data from virtual worlds may also need to be adapted for use in the real world. The ISO/IEC 23005 series does not specify how the adaptation is carried out but only specifies the interfaces.

Data for sensors are sensor capabilities, sensed data, and sensor adaptation preferences.

Data for actuators are sensory device capabilities, sensory device commands, and sensory effect preferences.

Data for virtual objects are characteristics of avatars and virtual world objects.

Sensory effect may be needed to enrich audio-visual contents.

The system architecture of the ISO/IEC 23005 series is depicted in Figure 1 and the scope of this document is highlighted in yellow. The information representation that acts as an input to the possible R→V/V→R Adaptation and as an exchangeable information format to support interoperability between the virtual worlds – as defined in ISO/IEC 23005-1 – is specified in this document.

NOTE The actual R→V/V→R Adaptation is deliberately informative and left open for industry competition.

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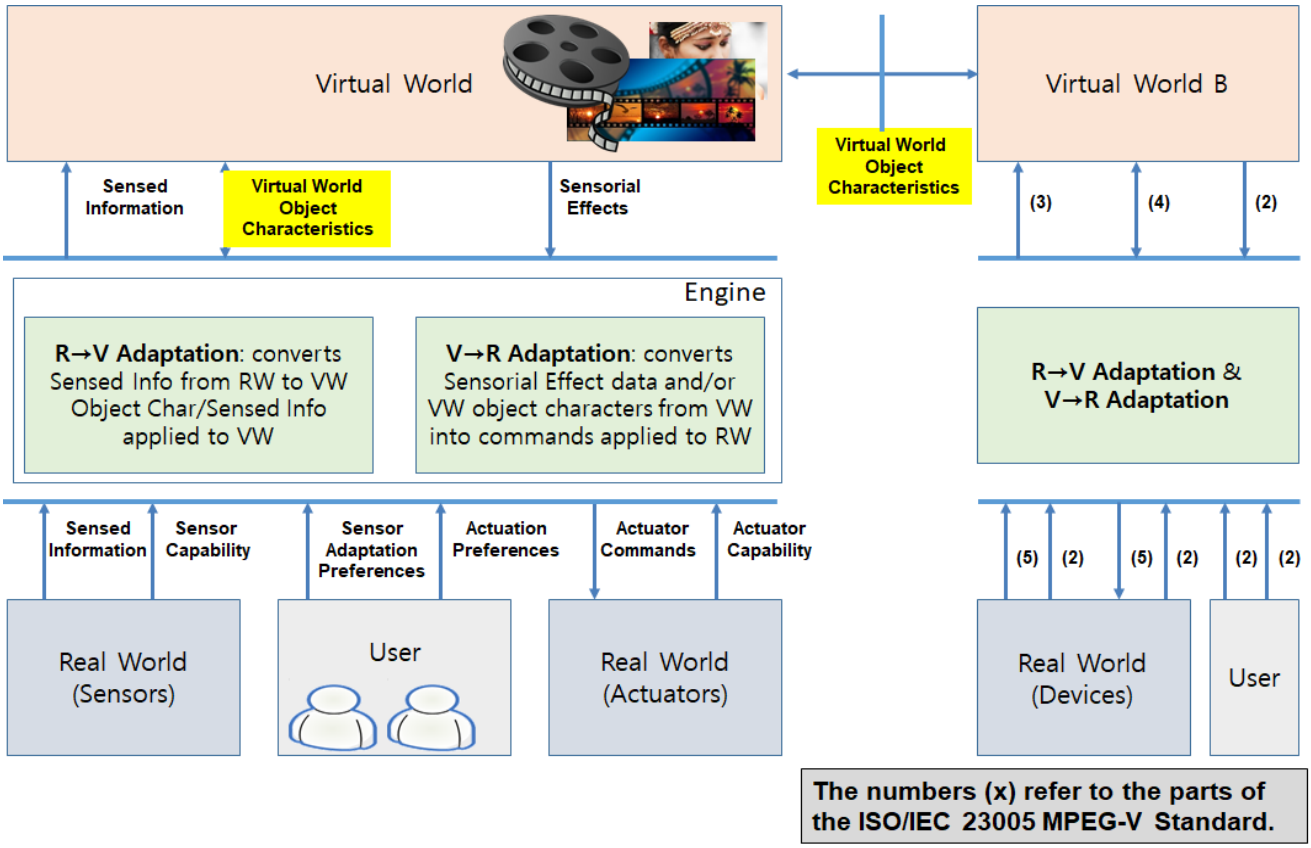

Figure 1 — Scope of the ISO/IEC 23005 series (showing this document in yellow)

This document contains the tools for describing the virtual world object characteristics making it possible to migrate a virtual world object (or only its characteristics) from one virtual world to another and to control a virtual world object in a virtual world by real world devices (Annex C). It addresses the normative aspects of the virtual world object characteristics including avatars and virtual objects, and also illustrates some non-normative examples.

The International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) draw attention to the fact that it is claimed that compliance with this document may involve the use of patents.

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Information technology — Media context and control —

Part 4:
Virtual world object characteristics

1 Scope

The technologies of this document specified are description languages and vocabularies to describe virtual world objects.

The adaptation engine is not within the scope of this document.

This document specifies syntax and semantics of the tools used to characterize a virtual world object related metadata:

— Virtual World Object Characteristics (VWOC) as an XML Schema-based language which enables one to describe a basic structure of avatars and virtual world objects in virtual environments.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 639 (all parts), *Codes for the representation of names of languages*

ISO/IEC 15938-5:2003, *Information technology — Multimedia content description interface — Part 5: Multimedia description schemes*

ISO/IEC 21000-5, *Information technology — Multimedia framework (MPEG-21) — Part 5: Rights Expression Language*

ISO/IEC 23005-6:—,[1] *Information technology — Media context and control — Part 6: Common types and tools*

[1] Under preparation. Stage at time of publication: ISO/IEC FDIS 23005-6:2018.

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